

# AMERICAN SOCIETY FOR TESTING MATERIALS



## ~ BULLETIN ~

ENGINEERS' CLUB BUILDING.

1315 SPRUCE ST.

PHILADELPHIA, PA.

NUMBER 12

FEBRUARY 15, 1924

### 1924 Annual Meeting at Chalfonte-Haddon Hall, Atlantic City

#### Notable Program for Meeting Being Developed

The Twenty-seventh Annual Meeting of the Society will, as previously announced, be held at the Chalfonte-Haddon Hall, Atlantic City, N. J., during the week of June 23, 1924. It is probable that Monday, June 23, will be devoted to committee meetings, with the first session of the annual meeting on Tuesday morning and the closing session Friday evening, June 27. It will be necessary as in the past two years to hold two or more simultaneous sessions. A provisional program will be mailed to the members about the end of April with the next issue of the BULLETIN.

#### Rates

Chalfonte-Haddon Hall is operated entirely on the American plan. Special rates for members and their guests are announced below:

Rooms with Private Bath.	Per Day.
Room occupied by one person.....	\$10.00
Room occupied by two persons.....	\$13.00 to \$18.00
Rooms with Running Water.	
Room occupied by one person.....	\$6.00 to \$8.00
Room occupied by two persons.....	\$12.00 to \$14.00

#### Reservations

Members who desire may reserve their accommodations now by addressing the hotel management. It is believed, however, that most members will wish to defer making their reservations until the program of the meeting has been distributed in April, at which time further details regarding reservations will be announced.

It will be recalled that the Chalfonte and Haddon Hall each has its own dining room service, so that members who wish to take their meals together regularly should be sure to secure reservations in the same hotel. Through the courtesy of the hotel management, members may at times and by arrangement in advance take their meals in either dining room. Obviously, this can be done only to a limited degree.

#### Entertainment

An Entertainment Committee is being organized under the chairmanship of Mr. W. M. Corse who handled this feature of the annual meeting last year so successfully. The Golf and Tennis Tournaments will be held as usual on the afternoon reserved for recreation, and other entertainment will be provided for members and their guests who are not interested in the tournaments. The Entertainment Commit-

tee is following the plan, successfully used in other years, of inviting the committees of the Society to subscribe towards a fund to defray the cost of prizes and certain other entertainment expense. Further announcement of entertainment features will be made.

#### Program of Meeting Being Developed

The Committee on Papers and Publications is now engaged in the development of the program of the annual meeting. A survey of the committee activities reveals a number of important subjects upon which our committees will report. The officers of the standing committees have been invited to suggest subjects for papers and discussions that may have come to the attention of their committees during the year. Through Circular No. 177, January 1, 1924, the aid of the membership was invited in the development of the program and offers of papers or suggestions on any subject relating to engineering materials will be received up to February 15, 1924. A number of such offers and suggestions have already been received. In addition, the Committee has selected certain outstanding topics, of which mention is made elsewhere, which it is endeavoring to develop for presentation at this meeting.

Although it is too early to make a detailed announcement, the following topics are expected to figure prominently in the program. The discussion of the past two years on Endurance Tests of Metals will be continued, especially as relating to hard alloy steels and hard-drawn brass and copper. Tests for Corrosion of Metals will assume a prominent place in the program and a Symposium on Corrosion-Resistant, Heat-Resistant and Electrical Resistance Alloys, of which further announcement is made on another page, will be a big feature. The discussion of last year on Gases in Steel has led to the tentative offer of a paper discussing the importance of this subject as applied to steel rails. The standard test bar for cast iron, particularly as it relates to cast-iron pipe and the effect thereon of the recently developed centrifugal method of casting pipe, will be an important topic. The field of cement and concrete will be well represented by reports and papers, the most notable item being the second report of the Joint Committee on Standard Specifications for Concrete and Reinforced Concrete including the results of

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## Society Enlarges Its Headquarters

To provide for increased facilities required by continued growth and expansion of the Society activities and to better care for meetings of the Society's committees, the Society has recently enlarged its headquarters by acquiring the fourth floor of the property at 1315 Spruce Street, on a six-year lease from the Engineers' Club of Philadelphia expiring December 31, 1929. This space is directly above the Society's present quarters on the third floor and with the present quarters gives a total floor space of approximately 2300 sq. ft. At the same time the Society gives up about 300 sq. ft. of space in an unfinished room in the rear of its present quarters, which was used for storage purposes and for duplication and addressograph work.

The lease on the third floor rooms, which would have expired at the end of 1924, has been renewed to December 31, 1929. The rental for the newly acquired fourth floor for this year is \$850. The rental on the present quarters for the present five-year lease has been \$5000, of which \$4467.17 was paid in advance in 1920, representing cost of alterations which was credited to the Society as rent paid in advance at the rate of \$1000 per annum. There is thus a balance due in 1924 for rental of the present quarters of \$532.83, making a total rental item for this year of \$1382.83. Beginning with 1925, the Society's annual rental expenses for headquarters will be \$2400.

The expense of remodeling the fourth floor into suitable quarters, which under the terms of the lease has been assumed by the Society, is in the neighborhood of \$3500. This sum, of which about \$2800 has been paid from current receipts for 1923, includes certain alterations necessary in the third floor rooms, but does not include the cost of new furnishings. Spread over a period of six years, the alteration costs represent approximately \$600 per year, which bring the effective annual rental up to \$3000—a reasonable figure considering existing rentals in Philadelphia.

Thus the question of Society headquarters has been very satisfactorily taken care of for a period of six years. The advantages of location in the Engineers' Club Building have proved considerable in the last four years, and we feel confident the membership at large will approve this solution of an important question.

The new quarters are not yet entirely furnished. When completed, there will be available three rooms for the use of committees, the present one on the third floor and two on the fourth floor, the latter being so arranged by means of an accordion door that they can be thrown into one large room, capable of seating all but the largest of the Society's committees. These two rooms occupy approximately 40 per cent of the fourth floor space. The remainder will be used for the accommodation of the editorial and publication departments of the Society, for the storage of current publications and supplies, for the addressing and duplicating machines, etc. The congestion in the main office on the third floor is thereby relieved, without sacrifice in the efficiency of the Society's operations, and the general appearance of the main office has been considerably improved.

It is estimated that the present quarters are sufficiently commodious to allow for expansion of personnel and equipment to provide for the growth of the Society during the period of the new lease.

The Executive Committee asks that members will visit the headquarters and will use the various facilities provided. Committees that find it convenient and desirable to meet in Philadelphia will now find ample accommodations for meetings, and the Secretary-Treasurer will be glad to arrange for meetings upon request of the committee officers.

## Research in A.S.T.M. to Be Stimulated

The matter of developing more fully that function of the Society designated in its Charter as "the Promotion of Knowledge of the Materials of Engineering," upon which discussion was directed at the annual meeting last June, has continued to receive the careful consideration of the Executive Committee. As emphasized at the meeting, it is important that the Society should consciously, in as systematic and concerted a way as possible, go about the task of extending the knowledge of engineering materials, their properties, their performance in service, and the correlation of properties and performance that determine the suitability of various materials for specific services. The main emphasis in the Society's work in the past twenty years has been upon standardization of specifications and methods of testing, and necessarily so. We have created the machinery and procedure for this purpose; and while that work should be continued as vigorously as ever, the emphasis for the immediate future at least should be on the promotion of knowledge of engineering materials.

Since research underlies the promotion of knowledge, and since work of this character is being carried on at present by many of the Society's committees in varying degrees, the Executive Committee is forming a small committee to be known as the "Committee on Correlation of Research in the A.S.T.M." This committee will be charged to devise ways and means by which this whole matter may be advanced in the Society along the soundest lines. The committee will not be a research committee in the sense of actually conducting research. While announcement cannot be made at this time of the personnel of the committee, it may be stated that the most careful thought is being given to this important matter.

An examination and evaluation of the present agencies in the Society for the promotion of knowledge of materials is the first step. These are essentially:

1. The present standing committees, all of which are engaged in this work in varying degrees.
2. Joint committees with other bodies.
3. Investigations and researches by members of the Society presented in the form of technical papers and discussions.
4. Dissemination of knowledge through Society publications.

In devising ways and means of further development, the committee will have three major problems to consider:

1. The stimulation of existing agencies and their possible modification.
2. A survey of the existing knowledge of engineering materials to determine those fields wherein further knowledge is essential and of greatest importance.
3. What new agencies, if any, are needed in the Society for the development of this work? Should research and standardization be handled in one committee, and if so under what conditions? Should separate research committees be formed, and if so what should be their relation to the existing committee organization and to the Committee on Correlation of Research?

The matter of financial support is important. The Society should offer every possible encouragement in the way of publication of researches and investigations in the properties of materials, and liberal appropriations from current funds should be made available for publication expenses. In addition, a fund should be established, of which the income should be used for administrative expenses of research activities within the Society, which may be considerable in view of the large field now covered by our activities. Finally, the financial support of specific investigations must be worked out for each individual case.

The whole problem is probably the most important that faces the Society to-day, and the future success of the Society's work is dependent in no small measure upon its wise solution.



## 1924 Annual Meeting

(Continued from page 1.)

laboratory and field tests that have been conducted by the joint committee to determine the practicability of certain of the recommendations in its first report. In the field of testing, several of the committee reports will include important recommendations, notably that of Committee E-1 on Methods of Testing relating to tests of metals. The broad question of classification of materials according to size is now engaging the attention of a number of our committees through the medium of Committee E-1 and will have a place on the program. Papers on textile materials, rubber products and gypsum are expected to add interest to those divisions of our work. All indications point to one of the most successful and inspiring meetings in the Society's history.

The Papers Committee will give particular consideration to providing adequate opportunity for discussion.

### Preprints of Reports and Papers

The members will recall that last year a new plan of distributing preprints of reports and papers was followed. This plan was apparently very favorably received and it effected substantial economies with no curtailment of the service desired by the members, so far as the Executive Committee has learned. The plan will accordingly be continued this year as follows: With the provisional program mailed to each member in April, there will go a return blank upon which the member will be asked to indicate those reports and papers he desires to receive, and preprints will be distributed only to those members who request them. All members attending the annual meeting will receive as they register a complete set of preprints.

### Symposium on Corrosion-Resistant Alloys

The Symposium on Corrosion-Resistant, Heat-Resistant and Electrical Resistance Alloys referred to in the preceding article is the outcome of an informal conference held at the Society's headquarters in October, reported in the *BULLETIN* of November 5, 1923. The following committee was appointed to act in an advisory capacity to the Committee on Papers in this matter and to assume charge of the Symposium and the securing of the necessary papers:

Jerome Strauss (chairman), U. S. Naval Gun Factory.  
P. A. E. Armstrong, Ludlum Steel Co.  
W. H. Bassett, American Brass Co.  
L. O. Hart, Driver-Harris Co.  
A. I. Krynsky, U. S. Bureau of Standards.  
P. D. Merica, International Nickel Co.  
H. M. Williams, General Motors Research Corp.

For the purpose of the Symposium the subject has been sub-divided into the following topics:

Corrosion-Resistant Alloys.	Atmospheric Sea Water Chemical and Acid Mine Water
Heat-Resistant Alloys....	Oxidation Only Mechanical Properties Chemical Action
Electrical Resistance Alloys	Low Temperature (Instrument Material, Resistor Material) High Temperature

An important feature of the Symposium will be a list giving the names, manufacturers, composition and properties of all of the alloys of these types now being marketed in this country and falling within the scope of the Symposium. As the first step in the preparation of this list a questionnaire has been sent to all known manufacturers of these alloys.

## Joint Meeting With A.S.M.E. at Cleveland, May 28

### To Discuss Effect of Temperature Upon the Properties of Metals

Arrangements are being made for a topical discussion on the subject "Effect of Temperature Upon the Properties of Metals," to be held at Cleveland, O., on Wednesday morning, May 28, in conjunction with the spring meeting of the American Society of Mechanical Engineers under the joint auspices of that Society and the American Society for Testing Materials. The importance of a more extended study of the behavior of metals at various temperatures has been recognized for some time and was recently brought to a head through the activities of a Sectional Committee on Standardization of Pipe Flanges and Fittings of which the American Society of Mechanical Engineers is a sponsor. The use in central station and power plant installations, in oil refineries and elsewhere, of considerably higher temperatures and pressures than were prevalent even a few years ago, has emphasized very forcibly the necessity of more exact knowledge regarding the behavior of metals at these elevated temperatures. Thus it has been recommended by the Sectional Committee that tests of materials at elevated temperatures be included in future specifications for valves, flanges and fittings to be used at these temperatures. The basis for such tests is not complete at present and it is necessary to carry on the required investigations under suitable auspices. The effect of low temperatures is also important.

Accordingly as a first step it was determined to arrange for a general discussion of the subject, and for this purpose the A.S.M.E. has invited the A.S.T.M. to join with it in a joint meeting and has asked the A.S.T.M. to arrange the program of the meeting. The following committee was appointed to prepare the program and secure the necessary papers:

V. T. Malcolm (chairman), Chapman Valve Co.  
H. J. French, U. S. Bureau of Standards.  
W. F. Graham, Curtis Bay Copper and Iron Works.  
R. S. MacPherran, Allis-Chalmers Co.  
L. W. Spring, Crane Co.  
A. E. White, University of Michigan.

The recommendations of this committee, which have been approved by the Papers Committees of the two societies, provide for the following four papers to introduce the general discussion:

1. Industrial Application of Metals at Various Temperatures, L. W. Spring.
2. Methods of Testing and Their Limitations, V. T. Malcolm.
3. Available Data on the Properties of Iron and Steels at Various Temperatures (with Bibliography), H. J. French.
4. Available Data on the Properties of Non-Ferrous Metals at Various Temperatures (with Bibliography), A. E. White and Clair Upthegrove.

In addition, the committee in charge of the program will present a report containing their recommendations for the future development of this subject. The four introductory papers will be comprehensive but their actual presentation at the meeting will be limited approximately to ten minutes each, it being the wish to devote the major portion of the session to discussion. It is particularly desired in this discussion not only to collate existing information on the subject, but to obtain representative expressions of opinion as to the need for further work and the type of work to be carried out. One of the ultimate purposes is to secure information that will result in fixing practical performance ratings for materials used at high and low temperatures.

It is planned to preprint these papers for advance distribution in the usual way and opportunity will be given later to the members to indicate their desire to obtain a set of these papers. Further announcements will be made.

# A.S.T.M. BULLETIN

Issued Quarterly by the  
AMERICAN SOCIETY FOR TESTING MATERIALS  
Engineers' Club Building, 1315 Spruce St., Philadelphia, Pa.

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R. E. HESS

Number 12

February 15, 1924

## The Society in 1923

At the threshold of the new year and in the midst of our plans for the work that lies before us, it is fitting to look back over the past year, which was so successful a one for the A.S.T.M. The publications are the fruit of the Society's work and are a measure of the service the Society renders to its membership and to the industries and the engineering profession at large. In 1923 there were published the largest Proceedings in our history (1689 pp.), in which were included a number of notable reports and papers. The increase in the number of tentative standards, of which there are now 190, is an excellent criterion of committee activities and the rapid growth of our work in the field of standardization. The Book of Tentative Standards, published as a special volume for the convenience of members, has assumed a place of considerable importance and the demand for it is growing rapidly. This is a very gratifying indication of the desire on the part of industry to use our tentative standards and undoubtedly results in helpful constructive criticism to our committees before they are advanced to standard.

The receipts from sales of publications in 1923 exceeded all previous records, being slightly over \$22,000. Of this, the biggest single item was the sale of the tentative standards just referred to, but the sales of the Book of Standards, separate reprints of standards, and the Proceedings exceeded previous records and indicate a continually growing demand for our publications. Thus the work we do is receiving wider and wider attention and recognition.

In the matter of membership, 1923 has set a fine record. There were 532 new members elected during the year, of which over one-third were secured through the activities of the standing committees. The membership at the close of the year was 3393, the net increase being 290.

This very gratifying increase in membership, as well as the increased distribution of our publications through sale, has been reflected in the finances of the Society. Thus the increased income from these two sources enabled the Executive Committee to meet from current receipts considerably increased publication expenses and nearly all the cost of remodeling the enlarged quarters of the Society, and to set aside \$2400 towards the expense of publishing the 1924 Book of Standards and \$2500 towards the Society's reserve funds. These matters will all be reported in detail in the annual report of the Executive Committee.

## A Few Words About 1924

We are going ahead vigorously all along the line for 1924. We want to keep our membership curve on the same upward slope of the past year. The personal interest of each member is unquestionably the surest means of obtaining well-qualified new members. The Executive Committee appeals with confidence to each and every member to continue the efforts so successfully put forth in 1923. There is enclosed an application blank for membership. Will YOU see that it is returned to us in the form of an application for membership?

## Daniel M. Buck

1877-1924.

It is with a distinct sense of sorrow and loss that we announce to the members the death of Daniel M. Buck, Metallurgical Engineer, the American Sheet and Tin Plate Company, a member of the Society since 1909 and a member of the Executive Committee. He died suddenly at Vandergrift, Pa., on January 23.

Mr. Buck was graduated from the Case School of Applied Science in 1900 where he later received the degrees of chemical engineer and metallurgical engineer. He had been connected with the American Sheet and Tin Plate Company for seventeen years and was metallurgical engineer for the past ten years. He was a leader in many technical investigations in iron and steel, his most noteworthy contributions being his researches in corrosion and his development of copper in steel as a rust-resistant influence. It was in connection with these phases of his work that he was most active in the Society. He was the secretary of Committee A-5 on Corrosion of Iron and Steel and had always taken an influential part in the investigations conducted by that committee. He was also a member of Committee A-1 on Steel, being particularly engaged in the development of sheet steel specifications. In 1922, he was elected a member of the Executive Committee of the Society on which he served with distinction. He was a member of many technical societies.

His death leaves a space in the ranks of our members that it will be difficult to fill. He will be remembered in our Society not alone for his scientific and technical accomplishments but as well for a charming personality and outstanding friendliness towards his fellows which was so evident in all of his associations with us.

## H. E. Diller

1878-1924.

We have learned with sorrow of the death of H. E. Diller, Metallurgical Editor of *The Foundry*, at his home in Lakewood, O., on January 17, following a brief illness. Mr. Diller was a member of the Society since 1903. He was associated for many years with Committee A-3 on Cast Iron and held the important chairmanship of its sub-committee on general castings. In 1918 when a separate Committee A-7 on Malleable Castings was formed, Mr. Diller was elected as chairman and served in that capacity until his death. He brought to all his work with us a wide experience on metallurgical subjects, in which he was recognized as a specialist.

Mr. Diller was educated at Pennsylvania State College and has long been associated with the iron and steel industry. Prior to his connection with *The Foundry*, which began in 1919, he had held important positions with the Western Electric Co. and the General Electric Co., notably in the physical testing laboratories of the latter company at Erie, Pa. Mr. Diller has left an enviable record of achievement in the field of metallurgical engineering, and his contributions to the activities of our Society will long be remembered.



## New Members, October 1, 1923, to February 1, 1924

One hundred and thirty-four new members were elected from October 1, 1923, to February 1, 1924, as follows:

Adelheim, F. R.	Jr. nson, E. L.
Ajax Rubber Co., Inc.	Johnson, J. K.
American Aggregate Co.	Jones, Bevan.
American Clay Products Co., Inc.	Judson, L. V.
American Instrument Co.	Keitel, E. J.
American Spiral Pipe Works.	Kennedy, J. P.
Asneft Government Oil Trust in Baku, Russia.	Knowles, F. W.
Atlantic Steel Co.	Kroeger, F. C.
Baltimore Tube Co., Inc., The.	Kuehnle, C. A.
Barrow, C. J.	Lavino and Co., E. J.
Bartholomew, Tracy.	Le Jeune, N. F.
Bell, H. P.	Lindsay, McMillan Co.
Bird, R. M.	Long Beach Public Library.
Blue Ridge Slate Corp.	Lovell, E. R.
Brett, J. F.	Luton, C. W.
Brown, A. L.	Marks Corp., H. E.
Bucyrus Co.	Md. Agric. Experiment Station.
Burd, H. G.	McColl Bros., Ltd.
California Oregon Power Co.	McKaig, W. W.
Castle, D. S.	McLeod, J. G., Jr.
Central Hudson Gas and Electric Co.	Midwest Refining Co., The.
Chemical Dept., Cairo, Egypt.	Miehle Printing Press and Mfg. Co.
Chemical Service Laboratories.	Miller, H. E.
City of Grand Rapids, Mich.	Minneapolis Street Railway Co.
Cleveland Assoc. of Bldg. Owners and Mgrs.	Mitchell, W. M.
Clutz, F. H.	Montchik, Edward.
Coleman, J. W.	Neill, W. A.
Computing-Tabulating-Recording Co.	Nelson, T. H.
Cramer, George.	Nester Co., Inc., L. G.
Curtiss, H. J.	Netherlands Gov't. Bureau of Public Roads.
Cushman, H. P.	New England Southern Mills.
Danielson, A. G.	New South Wales Gov't. Railways.
Dillon, Edward.	New York Wire Cloth Co.
Drainie, J. G.	Nixon, H. T.
Duquesne Light Co.	Nord, G. J.
Dyrenforth, L. Y.	Northern New York Utilities, Inc.
Easley, M. K.	Notvest, Robert.
Eppley Laboratory, The.	Osterstrom, R. C.
Erickson, C. L.	Parsons, D. E.
Falls Hollow Staybelt Co.	Powell, N. M.
Farnham, Robert.	Rover Co., Ltd., The.
Fickes, A. C.	Safety Car Heating and Lighting Co., The.
Freas, R. B.	Schultheis, E. W.
Free Public Library, Middletown, O.	Sheaff, Howard.
Free Public Library, New Bedford, Mass.	Sheffield Brick and Tile Co.
Gadsden, P. H., Jr.	Shertzer, T. B.
Gaertner and Co., Wm.	Simpson, T. D.
Garlock Packing Co., The.	Sonnenblick, Ira.
Giblin, R. J.	Southern Steel and Rolling Mill.
Gilmer Co., L. H.	Spelman, H. R.
Giulio, Revere.	Spring, L. W.
Girard Smelting and Refining Co.	Stoker Manufacturers Assoc.
Goodman Manufacturing Co.	Swan and Finch Co.
Hall, F. W.	Sweeney, B.
Harvey, D. G.	Torsion Balance Co.
Haviland Clay Works.	Tucker, R. T.
Hawkeye Portland Cement Co.	University of Liverpool.
Hay Walker Brick Co.	Virginia Railway and Power Co.
Hayden, H. P.	Walker, G. L.
Henningson Engineering Co.	Wallace, Walter.
Huston, J. S.	Walsh and Weidner Boiler Co.
Hutchinson, R. P.	Walworth Manufacturing Co.
Innes, R. K.	Whelen, J. H., Jr.
Innis, Speiden and Co., Inc.	Whitney Blake Co., The.
Ino, A.	Whitehall Cement Mfg. Co.
Jasper, T. McL.	Williams, R. V.
	Williamson, L. H.
	Zimmerman, J. H.

## Deceased Members

We announce with regret the death of five members:

D. M. BUCK, American Sheet and Tin Plate Co., Pittsburgh, Pa.  
H. E. DILLER, Penton Publishing Co., Cleveland, O.  
J. C. FITZSIMMONS, Standard Oil Co. (California), San Francisco.  
W. C. MARCKWORTH, The Pure Oil Co., Columbus, O.  
F. J. NAPOLITAN, Air Reduction Sales Co., Jersey City, N. J.

Our stock of Vols. I and III of the PROCEEDINGS has been exhausted for a long time. An Association abroad is desirous of securing Vols. I and III to complete its set of PROCEEDINGS. Any members who are willing to dispose of these two volumes are requested to so advise the Secretary-Treasurer.

## Reprints of Annual Tables of Constants

The Secretary General of Annual Tables of Constants and Numerical Data published by the International Commission under the authority of the National Research Council announce that the following list of reprints from Vol. IV of the tables is available for sale at the prices indicated:

	Price (French francs)	
	Paper	Bound
Spectroscopy, by M. L. Brunninghaus, Preface by A. Fowler, F.R.S., 210 pages.....	35	45
Electricity, magnetism, conductivity of electrolytes, electromotive forces, by MM. Malapert, V. Weiss, R. E. Slade and G. L. Higgen. Preface by F. B. Jewett, 144 pages.....	30	40
Radioactivity, electronics, ionization of gases, etc., by MM. J. Saphores and F. Bourion. Preface by Sir E. Rutherford, F.R.S., 19 pages.....	10	18
Crystallography and mineralogy, by L. J. Spencer. Preface by Sir Henry A. Miers, F.R.S., 65 pages.....	15	25
Biology, by E. Terroine and H. Colin. Preface by Jacques Loeb, 37 pages.....	12	20
Engineering and metallurgy, by L. Descroix. Preface by G. K. Burgess, 154 pages.....	30	40
Colloids, by E. Rebiere. Preface by Jacques Duclaux, 9 pages.....	6	12

These reprints contain all the data for the subjects indicated appearing in the volume which covers the literature of the world for the years 1913 to 1916, inclusive. Specialists having occasion to refer to data in the fields covered by these reprints will find them valuable for reference. Members of the Society are entitled to a 50 per cent discount on the prices listed.

Orders for any of these reprints should be sent direct to Dr. Charles Marie, 9 Rue de Bagneux, Paris 6.

## List of Publications

**Proceedings, Volume 23 (1923).**—The PROCEEDINGS for 1923 in two parts: Part I, committee reports with discussions and new and revised tentative standards (1006 pp.); Part II, technical papers with discussions (683 pp.). Prices to non-members: paper \$12.00, cloth \$13.00, half-leather \$16.00. To members for extra copies, \$7.00, \$8.00, and \$11.00, respectively.

**Book of A.S.T.M. Standards.**—Issued triennially. The 1921 edition (890 pp.) and the 1922 Supplement (54 pp.) and the 1923 Supplement (126 pp.) containing 192 standards adopted by the Society. The prices to non-members: cloth, \$11.00; half-leather \$12.50. To members for extra copies: \$8.00 and \$9.50, respectively.

**Supplements to Book of Standards.**—The twelve 1922 standards forming the first supplement to the 1921 Book of A.S.T.M. Standards are issued in a pamphlet of 54 pages. Price to non-members: \$1.00. To members for extra copies: \$0.75.

The twenty 1923 Standards, with one revision of an existing standard, forming the second supplement to the Book of Standards are issued in a pamphlet of 126 pages. Price to non-members: \$2.00. To members for extra copies: \$1.50.

**Book of A.S.T.M. Tentative Standards.**—The 1923 edition (859 pp.) contains 190 tentative standards issued by the Society. Prices to non-members: paper \$7.00, cloth, \$8.00. To members for extra copies: \$4.50 and \$5.50, respectively.

**Separate Standards and Tentative Standards.**—Separate copies of all standards and tentative standards are available. The price is 25 cents for a single copy and in lots up to 50. Larger quantities are furnished at lower prices.

**Complete Sets of Proceedings** from 1902 to 1923, inc. 'ive (with the exception of Vols. I and III). Special prices are made to members for extra copies and for complete sets. Binding in paper, cloth or half-leather.

**Index to Proceedings, Vols. XIII to XX.**—An index to the Proceedings for the years 1913 to 1920, inclusive (189 pp.), containing both an author and subject index of the committee reports and technical papers including the discussions. Prices to non-members: cloth \$2.50, half-leather \$3.50. To members: cloth, \$1.75, half-leather \$2.75, respectively.

**Miscellaneous.**—Volume of annual reports of Committee D-1 on Preservative Coatings for Structural Materials for the years 1903-1914 (567 pp.). Price, \$5.00 in cloth.

**Progress Report of Joint Committee on Specifications for Concrete and Reinforced Concrete (1921).** Price, \$1.50.

Inquiries and orders should be directed to:

AMERICAN SOCIETY FOR TESTING MATERIALS  
1315 Spruce Street, Philadelphia

## A.S.T.M. Committee Activities

Space in the BULLETIN is reserved for items of interest about committee activities. Officers of committees are invited to prepare information of suitable character for publication. A schedule of committee meetings for three months in advance will be published in each issue.

### Metals Committees to Meet in Pittsburgh

The plan of having a number of the committees of the Society whose activities and personnel are more or less inter-related meet at the same place during a "Committee Week" is being tried out in connection with the annual spring meetings of eight metals committees. The hearty cooperation of these committees seems to assure success, and the outcome will determine the future possibilities of this plan.

Meetings of these committees and their sub-committees will be held at the William Penn Hotel, Pittsburgh, Pa., March 12, 13 and 14. The following schedule of the main committee meetings is announced, which will be supplemented by notice to the members of these committees of a detail schedule in which will appear the time and place of all sub-committee meetings:

#### March 12.

- 10.00 A. M. .... Committee A-6 on Magnetic Properties.
- 10.00 A. M. .... Committee A-7 on Malleable Castings.
- 3.30 P. M. .... Committee B-3 on Corrosion of Non-Ferrous Metals.
- 8.00 P. M. .... Committee E-4 on Metallography.

#### March 13.

- 10.00 A. M. .... Committee B-2 on Non-Ferrous Metals and Alloys.
- 2.00 P. M. .... Inspection Trip.
- 8.00 P. M. .... Committee A-5 on Corrosion of Iron and Steel.

#### March 14.

- 11.00 A. M. .... Committee A-4 on Heat Treatment of Iron and Steel.
- 2.00 P. M. .... Committee A-1 on Steel.
- 8.00 P. M. .... Informal Smoker.

A local committee under the chairmanship of F. N. Speller is arranging for an inspection trip and smoker.

Further announcements regarding these meetings will be mailed to the members of the committees.

### Committee D-16 on Slate Organized

A temporary organization of the new Committee D-16 on Slate was effected at a meeting at the Hotel Commodore, New York City, January 21. The organization of the committee has been under consideration for some time and was the immediate outcome of the comprehensive Discussion on Slate held at the annual meeting last June. The tentative personnel is:

#### Non-Producers.

American Institute of Architects,	Kessler, D. W.
Le Roy E. Kern.	U. S. Navy Department.
Farmer, F. M.	Westinghouse Elec. and Mfg. Co.,
General Electric Co.,	Dean Harvey.
J. A. Capp.	

#### Producers.

Boyd, D. K.	Notvest, Robert
Coleman, John W.	Stanwood, P. C.
National Slate Association.	Structural Slate Co.,
	W. A. Kitto.

Invitations have been extended to other individuals and companies to serve on the committee.

The Secretary-Treasurer presided at the organization meeting as the representative of the Executive Committee. The committee deferred the election of permanent officers, requesting the Secretary-Treasurer to continue as temporary chairman and electing Mr. Kessler as temporary secretary.

The first work to be undertaken is the development of standard methods of testing slate, upon which agreement must be had before standard specifications are possible. The various kinds of slate will be considered, including structural, roofing, blackboard and electrical. With respect to electrical slate, arrangements will be made for cooperation with Committee D-9 on Electrical Insulating Materials. The importance of methods of determining absorption led the committee to request Mr. Kessler to present at the next meeting all available data on this subject. It was also voted to ascertain if the National Slate Association will furnish slate for use of the committee in its program of tests.

### Field Tests of Concrete to be Reported at Annual Meeting

In order to determine the practicability of the recommendations of the Joint Committee on Standard Specifications for Concrete and Reinforced Concrete for securing the compressive strength desired in concrete produced under field conditions, a series of field tests of concrete has been undertaken at Newark Bay Bridge of the Central Railroad of New Jersey through the cooperation of the Joint Committee on Concrete and Reinforced Concrete and a joint committee of contractors. These tests include those for uniformity of workability or consistency to establish the range of consistency to be expected throughout the work; tests for the uniformity of strength as determined by testing 6 by 12-in. cylinders made from the same batches of concrete from which the consistency tests are made; tests to determine the effect of quantity of cement and consistency for field-made test pieces for comparison with laboratory test pieces made from the same materials in the same proportions; tests to determine the effect of condition of curing on the strength by allowing the specimens to remain unprotected from low temperatures for the first 24 hours; tests to determine the effect of time of mixing on the plasticity and strength of concrete; tests to determine the relation of strength of field-made test pieces to the strength of concrete in structures as shown by specimens taken from special slabs cured as nearly as practicable in the same manner as the structure itself; and comparative tests of different lots of cement used.

Most of the tests outlined above have been carried to completion including a few tests on the effect of time of mixing. Conditions for control of the tests were most favorable especially as regards the aggregates used, and it is expected the tests will be of considerable value in determining the applicability of the specifications prepared by the Joint Committee.

The Joint Committee has completed its analysis of the field tests carried out on the building of the Victor Talking Machine Company in Camden, N. J., mentioned in the BULLETIN of April, 1923. A report has been prepared and will be submitted to the parent societies.

### New Sub-Committee on Flanges and Fittings

Committee A-1 on Steel is engaged in organizing a new Sub-Committee on Steel Flanges and Fittings. An A.E.S.C. Sectional Committee on Standardization of Pipe Flanges and Fittings has, with the aid of the Society's representatives, Messrs. V. T. Malcolm and H. V. Wille (represented by J. A. Hance), prepared specifications for Carbon Steel Castings for Valves, Flanges and Fittings, for Steel for Bolting Material, and for Forged or Rolled Steel Flanges, based upon A.S.T.M. specifications and designed for installations operating at high pressures and temperatures, which have been submitted to the Society for its consideration and final action. It is to review these specifications and to undertake the preparation of additional ones that may be needed that the new sub-committee is being organized. Serving under Mr. Malcolm, who has been designated as chairman, the sub-committee will be representative of all the interests involved, including manufacturers of the basic materials, manufacturers of flanges and fittings, central power stations, electric light interests, turbine builders, petroleum interests, and consulting engineers and constructors. Invitations have been extended to over twenty individuals and companies, including a number that are now on the sectional committee. If possible the committee will meet for organization in connection with the Pittsburgh meeting of Committee A-1.



## Nomenclature and Definitions

Committee E-8 on Nomenclature and Definitions held a meeting at the Society's Headquarters on February 8 at which the work of the several sub-committees was reviewed and a number of definitions of terms passed upon. The report of the Sub-Committee on Specific Gravity received especial consideration. The recommended definitions for specific gravity submitted by the sub-committee in its report published in 1923 had been circularized among the standing committees for criticism and comment. In the light of these criticisms some changes seemed desirable in the definitions, so they were referred back to the sub-committee for further development. The sub-committee was asked to prepare an analysis of the criticisms and comments received for inclusion in the next annual report of Committee E-8.

Action was taken to refer the following definitions of terms to letter ballot of Committee E-8 for approval: Definitions of Terms Relating to Hollow Tile, Magnetic Testing, Textile Materials, Petroleum Products. A number of other definitions of terms which seemed to be in satisfactory form except for a few points still under discussion between the Advisory Committee of Committee E-8 and the standing committee concerned may be sent out to letter ballot for approval at the discretion of the Advisory Committee as follows: Definitions of Terms Relating to Metallography, Bituminous Materials, Clay, Gypsum, Methods of Testing.

Sub-Committees on Sieve and Screen and Cementitious Materials have under consideration a number of terms that will be reported upon at some future time. A definition for "sand" prepared by the Sub-Committee on Sand will be presented by Committee E-8 as a tentative definition.

## Classification of Material According to Size

As announced in the BULLETIN for November 5, 1923, a new sub-committee of Committee E-1 on Methods of Testing has been organized to take up the subject of classification of materials according to size, with the immediate problem of unifying methods of mechanical separation by means of sieves. An organization meeting was held on November 15 and a further meeting will be held on February 14, at which consideration will be given to a draft of specifications for testing sieves. This specification will include the requirements for size of opening and wire diameter with tolerances. Tests being carried out at the U. S. Bureau of Standards and at the Structural Materials Research Laboratory will furnish considerable data which will serve as a basis for the formulation of these specifications. These will be part of the requirements of a standard screen scale series. It is expected that this standard screen scale will be based solely on the opening of the screen with as broad a tolerance in wire sizes as can be given without interfering with the desired accuracy, with the result that specifications can be written and results reported in the same terms independent of the particular screen used for making the tests.

It is also planned to draw up definite recommendations for methods of making sieving tests, difficulties ordinarily encountered in the use of screens and the points which should be specially mentioned whenever screen tests are a part of any specifications.

It is possible that in the future the sub-committee may consider other methods besides screening for classifying materials according to size. This would apply especially to materials too fine for screening.

## Schedule of Committee Meetings

Date	Committee	Place
February 14	Sub-Committee VII, of Committee C-1, on Strength	Buffalo.
February 14	Sub-Committee, of Committee E-1, on Classification of Material	Philadelphia.
February 14	Sub-Committee, of Committee E-1, on Mechanical Testing	Philadelphia.
February 15	C-10 on Hollow Building Tile	Chicago.
February 15	E-1 on Methods of Testing	Philadelphia.
March 7-8	D-13 on Textile Materials	Washington.
March 12	D-7 on Timber	Pittsburgh.
March 12	A-6 on Magnetic Properties	Pittsburgh.
March 12	A-7 on Malleable Castings	Pittsburgh.
March 12	B-3 on Corrosion of Non-Ferrous Metals and Alloys	Pittsburgh.
March 12	E-4 on Metallography	Pittsburgh.
March 13	A-5 on Corrosion of Iron and Steel	Pittsburgh.
March 13	B-2 on Non-Ferrous Metals and Alloys	Pittsburgh.
March 14	A-1 on Steel	Pittsburgh.
March 14	A-4 on Heat Treatment of Iron and Steel	Pittsburgh.
March 18	C-7 on Lime	Washington.
March 28	D-2 on Petroleum Products and Lubricants	New York City.
March	C-11 on Gypsum	Washington.
March	D-9 on Electrical Insulating Materials	Washington.
April	8. Executive Committee	Philadelphia.
April	D-1 on Preservative Coatings	Washington.

**Committee A-1 on Steel.**—A number of sub-committees of Committee A-1 on Steel held regularly scheduled meetings at the Society's Headquarters on January 10 and 11. In addition the Advisory Committee held a meeting at which the important decision was reached of organizing a new Sub-Committee XXII on Steel Flanges and Fittings referred to in detail in another column.

Sub-Committee II on Structural Steel for Bridges, etc., has been cooperating with a committee of the American Railway Engineering Association for the purpose of harmonizing where possible the differences that exist between the A.S.T.M. Specifications for Bridge and Building Steels and the corresponding A.R.E.A. specifications. The sub-committee is undertaking as new work specifications for silicon steel for bridges.

In connection with the work of Sub-Committee VI on Forgings an investigation is under consideration to determine the effect on the properties of forgings of the amount of reduction between ingot and bloom. It is proposed that steel of 0.40-0.50 per cent carbon and 0.50-0.60 per cent manganese be produced by three different manufacturers and blooms rolled and forged with reductions in cross-sectional area between ingot and bloom of 2 to 1, 3 to 1 and 4 to 1. The blooms, both without treatment and annealed, will be tested as follows: tensile strength, etch (full size cross-section) and microscopic examination. The blooms will then be made into billets 13 in. square which will be hammered and pressed into rounds 16, 12 and 8 in. in diameter. The same series of tests will then be made on these rounds both untreated and annealed. This investigation has an important bearing upon the work of the committee and is expected to yield valuable data.

Sub-Committee IX on Steel Tubing and Pipe is recommending extension of the Society's Specifications for Welded and Seamless Steel Pipe to include double extra strong pipe.

Sub-Committee XI on Boiler Steel is recommending certain revisions in the Society's Specifications for Boiler Steel for Stationary Service that have been agreed upon in joint meeting with the A.S.M.E. Boiler Code Committee. The principal revision is that of providing for an additional tension test on firebox steel taken from the top of the plate.

Sub-Committee XIV on Tool Steel has prepared specifications for carbon tool steel and for high-speed tool steel which will be presented at the next meeting of Committee A-1. The committee is keeping in touch with the work of a special

research committee of the American Society of Mechanical Engineers on cutting and forming of metals.

The next meeting of Committee A-1 will be held in Pittsburgh March 14, in connection with which a number of the sub-committees will meet for final review of the year's work. This has been a particularly active year in the steel committee.

**Committee A-2 on Wrought Iron** held a meeting at the Society's Headquarters on January 9. Reports from various sub-committees were received and reviewed. These for the most part dealt with revisions contemplated in the standards and tentative standards. The committee is recommending the advancement to standard of the Tentative Specifications for Merchant Bar Iron and of the Tentative Specifications for Iron and Steel Chain. The latter specifications have been completely revised so as to bring them into harmony with the practice of manufacturers and consumers.

**Committee A-5 on Corrosion of Iron and Steel** has under consideration the carrying out of some exposure tests in sea water to determine the relative merits of copper-bearing and non-copper-bearing steel under such conditions.

Exposure tests are under consideration on the following metallic protective coatings: Hot dip galvanized; Sherardized; Cadmium plate; Electro Zinc plate; Calorized; Chromium plate; Terne plate, and Zinc coating by a spraying process. In addition to sheets of these metals, castings are to be made of both cast and malleable iron and suitable wire test pieces will be included. The following locations have been suggested for carrying out these tests:—The New Jersey Zinc Company's property at Palmerton, Pa.; The Paint Testing Station of the Pennsylvania Railroad, at Altoona, Pa.; The Morris Cove Power Station of the New York Central Railroad and if possible a semi-tropical location such as the sea coast in Cuba or Houston, Texas.

The problem of specifications for galvanized sheets is being developed by the recently organized Sub-Committee VI on Specifications for Metallic-Coated Products under the chairmanship of H. E. Smith.

**Committee A-8 on Magnetic Analysis** is engaged essentially in research activities. One of the important phases of its work is the magnetic analysis of twist drills by one of its sub-committees, upon which a report of substantial progress was made at the annual meeting last June. A further report will be made this year, supplemented by a paper by a member of the committee, which will go into certain aspects of the results that have been obtained. The data already published by the committee have led to the decision to examine magnetically a series of specimens of high speed steel of suitable dimension and uniform cross-section, which will permit of the determination of the fundamental magnetic and physical data for this material. It is expected that these specimens will be furnished to the committee by the Westinghouse Electric and Manufacturing Co.

**Committee B-1 on Copper Wire** will cooperate with a committee of the American Electrical Railway Association in the formulation of specifications for high-strength low-conductivity trolley wire. This is a continuation of cooperative work begun over a year ago which resulted in the joint preparation of Specifications for Round and Grooved Hard-Drawn Copper Trolley Wire, presented at the annual meeting of the Society last June. The joint committee will consist of W. H. Bassett, C. D. Gray and H. J. Horn, representing the A.S.T.M., and H. S. Murphy, Adrian Hughes, Jr., J. Walter Allen and C. L. Hancock, representing the A.E.R.A. It is planned ultimately to develop this work as a project of the American Engineering Standards Committee under the joint sponsorship of the two societies.

**Committee C-1 on Cement** held a meeting on January 15. The principal items under discussion were the elimination of the specific gravity clause from the present specifications and the acceptability of the present Tentative Specifications and Tests for Compressive Strength of Portland-Cement Mortars.

A manual for the use of cement testers to supplement the standard tests and specifications for portland cement has been in preparation.

A sub-committee to deal with natural and allied cements has been organized under the chairmanship of Mr. E. L. Conwell. The personnel of the sub-committee is now complete and it will commence work immediately.

**Committee D-2 on Petroleum Products and Lubricants** held a meeting in Washington, D. C., on November 9 at which reports were received from the various sub-committees.

The Sub-Committee on Emulsification is making an investigation of the surface tension method developed by the Texas Company for the measuring of emulsibility of lubricating oils and is making comparative runs on various oils using the Sinclair and A.S.T.M. steam emulsion tests.

The Sub-Committee on Sampling and Gaging expects to establish an abridged thermal expansion table based upon the complete tables computed by the U. S. Bureau of Standards.

The Sub-Committee on Nomenclature is at work in preparing definitions for a number of terms relating to petroleum products including definitions of the terms "gas oil," "petrolatum," and "shale oil." The matter of definitions is considered of prime importance and one of international interest. Cooperation has been suggested with the International Union of Pure and Applied Chemistry.

**Committee D-5 on Coal and Coke** held a meeting at the Society's Headquarters on February 6 at which the advancement to standard of the Tentative Method of Test for Volume of Cell Space of Lump Coke and of the Tentative Specifications for Gas and Coking Coals was recommended.

A Method of Test for Fineness of Powdered Coal was accepted for recommendation as tentative. Work on the problem of determining the fineness of powdered coal was started last year when a comprehensive cooperative test was made by ten different laboratories. As a result of this work a preliminary draft of the method of test was prepared and sent out for criticism and suggestions. In the light of the suggestions received the method was re-written in the form in which it is now being presented.

The Sub-Committee on Standardization of Anthracite Sizes is reporting progress on the standardization of names and sizes of anthracite coal as used in the trade. The names and sizes which are more generally used in present practice are as follows:

	Round Hole Sieves Pass Through	Retained On
Broken (Furnace).....	4½ in.	3½ in.
Egg.....	3½ "	2½ "
Stove.....	2½ "	1½ "
Chestnut (Nut).....	1½ "	¾ "
Pea.....	¾ "	½ "
Buckwheat No. 1.....	½ "	¼ "
Buckwheat No. 2 (Rice).....	¼ "	⅛ "
Buckwheat No. 3 (Barley).....	⅛ "	⅜, ⅙ in.
Buckwheat No. 4 (Culm).....	⅜, ⅙ in.	

The sub-committee next expects to take in hand the accumulation of all data available on the present practice in the testing of samples representative of anthracite shipments.

**Committee D-15 on Thermometers** held a meeting in Rochester, N. Y., on November 13. Attention was called to the organization of a Committee on Thermometers of the Federal Specifications Board, and it was pointed out that this committee would probably be able to use the A.S.T.M. Specifications. Committee D-15 is at work on the preparation of specifications for high distillation thermometers. These will supersede the specifications for thermometers as appearing in the present methods of the Society for distillation as prepared by Committees D-2, D-4 and D-7. Specifications for a thermometer for use in the distillation of turpentine are under consideration.